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Dr. Kenneth Gordon, as of April 2001, is a Special Consultant with National Economic Research Associates, Inc. specializing in utility regulation and related issues. Prior to that date, Dr. Gordon was a Senior Vice President with National Economic Research Associates. He was Chairman of the Massachusetts Department of Public Utilities from January 1993 to October of 1995. He came to the Massachusetts Commission from the Maine Public Utilities Commission, where he held the office of Chairman from 1988 through the end of 1992. Prior to that, he was an Industry Economist at the Federal Communications Commission's Office of Plans and Policies. Prior to that, he taught at several colleges since 1965, the most recent position having been at Smith College.

Dr. Gordon was an active member of the National Association of Regulatory Utility Commissioners (NARUC) and served as president of that organization in 1992. He was also a member of the Executive Committee, and the Committee on Communications of NARUC. He has served as Chairman of the New England Conference of Public Utilities Commissioners Telecommunications Committee, and is a former Chairman of the Power Planning Committee of the New England Governors' Conference. He currently also serves on several boards and committees. Dr. Gordon has authored a number of publications and lectures widely on topics related to utility regulation.

Dr. Gordon is a graduate of Dartmouth College and holds a doctorate in economics from the University of Chicago.

EDUCATION

University of Chicago	Ph.D	1973
University of Chicago	M.A.	1963
Dartmouth College	A.B.	1960

EMPLOYMENT

April 2001 -	National Economic Research Associates, Inc., Cambridge, MA <u>Special Consultant</u>
August 1996 – March 2001	National Economic Research Associates, Inc., Cambridge, MA <u>Senior Vice President</u>
November 1995 – July 1996	National Economic Research Associates, Inc., Washington, D.C. <u>Senior Vice President</u>
October 1995	Consulting Economist
January 1993 - October 1995	Massachusetts Department of Public Utilities <u>Chairman</u>
October 1988- December 1992	Maine Public Utilities Commission <u>Chairman</u>
1980 - 1988	Federal Communications Commission, Office of Plans and Policy <u>Industry Economist</u>
1965 - 1980	University and College Teaching (most recently at Smith College)
1963 - 1964	University of Chicago <u>Research Associate</u>

CURRENT APPOINTMENTS AND MEMBERSHIPS

Telecommunications Policy Research Conference

Chair, 1995-1996

Board Member, 1994

Energy Modeling Forum (EMF 15, A Competitive Electricity Industry),
Stanford University

Member

American Economic Association

Transportation and Public Utilities Group, AEA

PAST APPOINTMENTS AND MEMBERSHIPS

National Association of Regulatory Utility Commissioners

Communications Committee, 1990 - 1995

Executive Committee, 1991-1995

President, 1992

New England Conference of Public Utility Commissioners
Power Planning Committee

Chairman

Governor's Electric Utility Market Reform Task Force
Co-Chairman

Boston University Telecommunications Forum
Advisor

Center for Public Resources, Legal Program to Develop
Alternatives to Litigation
Chairman, Utilities Committee

Office of Technology Assessment, Advisory Panel on International
Telecommunications Networks

Bellcore Advisory Committee,
Member and Chairman, 1993 to 1996.

ACTIVITIES

Participant in numerous regional and state committees, organizations, and task forces.

Participant in various NARUC/DOE conferences on gas and electricity issues.

Frequent speaker on electric, telephone and environmental issues nationally.

TESTIMONIES

Before the New Jersey Board of Public Utilities on behalf of Verizon New Jersey, Surrebuttal Testimony on structural separation and code of conduct issues (Docket No. TO01020095). Filed June 15, 2001

Rebuttal Testimony on behalf of Qwest Corporation, Application of Authority to provide in-region interLATA service (Docket No. INU-00-2). Filed May 23, 2001.

Before the State of New York State Public Service Commission on behalf of Verizon New York (Case No. 00-C-1945): Initial panel testimony on the New York State competitive marketplace. May 15, 2001 (co-sponsored with William E. Taylor).

Before the Commonwealth of Kentucky Public Service Commission on behalf of E.ON AG, Powergen plc, LG&E Energy Corp., Louisville Gas and Electric Company and Kentucky Utilities Company, (Case No. 2001-104). Direct testimony on the benefits to consumer's resulting from the acquisition of Powergen by E.ON AG. May 14, 2001.

Before the New York State Public Service Commission on behalf of New York State and Gas Corporation, Affidavit on the proper treatment of proprietary competitive information by regulators. Affidavit filed April 23, 2001.

Before the Virgin Islands Public Services Commission, Government of the Virgin Island of the United States (PSC Docket No. 526) on behalf of Innovative Telephone, Rebuttal testimony regarding rural exemption, request for interconnection for Innovative Telephone. Filed April 10, 2001.

Before the State of New York Public Service Commission on behalf of Energy East Corporation, RGS Energy Group, Inc., New York State Electric & Gas Corporation, Rochester Gas and Electric Corporation, and Eagle Merger Corp. Affidavit filed March 23, 2001.

Before the Indiana Utility Regulatory Commission on behalf of PSI Energy, Inc. (IURC Docket No. 41445-S1): Rebuttal testimony on the continued use of a purchased power tracker. Filed February 8, 2001.

Before the Pennsylvania Public Utility Commission on behalf of Verizon PA: Rebuttal testimony on why the structural separation model used in electricity does not apply to telecommunications. October 30, 2000.

Before the State of New York Public Service Commission on behalf of New York State Electric & Gas Corporation (Case 96-E-0891): Rebuttal testimony on market power analyses used in setting the backout credit. October 30, 2000. (Cosponsored with David Kathan.)

Before the Connecticut Department of Public Utility Control, on behalf of Connecticut Natural Gas Corporation (Docket No. 99-09-03, Phase II): Rebuttal testimony on role of incentive ratemaking. October 11, 2000.

Before the New York Public Utilities Commission on behalf of New York State Electric & Gas Corporation (Case 96-E-0891): Direct testimony on whether the backout credit set in a stipulation continues to be proper. October 4, 2000. (Cosponsored with David Kathan.)

Before the Virginia State Corporation Commission on behalf of Appalachian Power d/b/a/ American Electric Power Company (Docket Case No. PUA980020): Direct testimony regarding use of "asymmetric" transfer price rules. Filed September 20, 2000.

Before the Alberta Energy and Utilities Board, on behalf of ATCO Gas, ATCO Pipelines, and ATCO Electric: Direct testimony addressing affiliate issues. August 31, 2000.

Before the Iowa Utilities Board on behalf of Qwest Corporation (Docket No. INV-00-3): Direct testimony on deregulation of local directory assistance services. August 11, 2000.

Before the Connecticut Department of Public Utility Control on behalf of the Southern Connecticut Gas Company (Docket No. 99-04-18, Phase III): Late-filed Exhibit No. 159 (direct testimony) on the proper design of an incentive ratemaking plan. August 11, 2000.

Before the Connecticut Department of Public Utility Control on behalf of Connecticut Natural Gas Corporation (Docket No. 99-09-03 Phase II): Prefiled supplemental testimony addressing incentive rate-making issues. Filed August 11, 2000.

Before the Maine Public Utilities Commission on behalf of Central Maine Power Company. Surrebuttal testimony regarding the proper role of incentive ratemaking. August 10, 2000.

Before the Pennsylvania Public Utility Commission on behalf of Bell Atlantic PA (now Verizon PA): Direct testimony on the costs and problems with structural separation in telecommunications. June 26, 2000.

Before the Maine Public Utilities Commission on behalf of Central Maine Power Company (Docket No. 99-666): Rebuttal testimony on incentive rate-making issues. Filed June 22, 2000.

Before the Connecticut Department of Public Utility Control, The Southern Connecticut Gas Company Bench Request/Late file Exhibit (direct testimony) on proper implementation of incentive ratemaking. May 24, 2000.

Before the Public Utilities Commission of Ohio, on behalf of the Cincinnati Gas & Electric Company (Case No. 99-1658-EL-ETP): Supplemental testimony addressing shopping incentive and market power issues. Filed May 1, 2000.

Before the New York Public Service Commission on behalf of New York State Electric & Gas Corporation (NYSEG). Affidavit on the proper calculation of the billing credit customers would receive that switch. Filed April 20, 2000.

Before the Public Utilities Commission of Ohio, on behalf of the Cincinnati Gas & Electric Company: Direct testimony addressing shopping incentive and market power issues. Filed December 28, 1999.

Before the Federal Communications Commission, on behalf of Virgin Islands Telephone: Comments addressing Federal universal service support in the U.S. Virgin Islands. Filed December 19, 1999.

Before the Connecticut Department of Public Utility Control, on behalf of Connecticut Natural Gas Corp.: Direct testimony on performance based ratemaking. Filed November 8, 1999.

Before the Public Service Commission of Maryland, on behalf of Baltimore Gas and Electric Co., etc.: Reply testimony on "code of conduct" issues. Filed October 26, 1999.

Before the Illinois Commerce Commission, on behalf of Illinois Power Company: Rebuttal testimony addressing the pricing of metering and billing services. Filed October 21, 1999.

Before the Maine Public Utility Commission, on behalf of CMP Group, Inc.: Rebuttal testimony on issues related to acquisition of CMP by Energy East. Filed October 13, 1999.

Before the Illinois Commerce Commission, on behalf of Illinois Power Company: Direct testimony addressing the proper pricing of metering and billing services. Filed October 8, 1999.

Before the Public Service Commission of Maryland, on behalf of Baltimore Gas and Electric Co., etc.: Direct testimony on "code of conduct" issues. Filed October 1, 1999.

Before the Maine Public Utilities Commission, on behalf of Central Maine Power Co.: Direct testimony addressing the proposed alternative ratemaking plan. Filed September 30, 1999.

Before the Michigan Public Service Commission, on behalf of Ameritech Michigan: Direct testimony regarding economic consequences resulting from full avoided cost discount as applied to resale of existing contracts. Filed September 27, 1999.

Before the Public Service Commission of West Virginia, on behalf of Allegheny Power and American Electric Power: Rebuttal testimony on "code of conduct" issues. Filed July 14, 1999.

Before the Maine Public Utilities Commission, on behalf of Central Maine Power Co.: Direct testimony on the acquisition of CMP by Energy East. Filed July 1, 1999.

Before the Public Service Commission of West Virginia, on behalf of Allegheny Power and American Electric Power: Direct testimony on "code of conduct" issues. Filed June 14, 1999.

Before the Illinois Commerce Commission, on behalf of Commonwealth Edison: Rebuttal testimony addressing the design of delivery services tariffs. Filed May 10, 1999.

Before the Subcommittee on Energy and Power, on behalf of National Economic Research Associates: Statement addressing electric restructuring market power issues. Filed May 6, 1999.

Before the New Jersey Public Utilities Board, on behalf of the Edison Electric Institute: Direct testimony on the PUC's draft affiliate relations standards. Filed May 3, 1999.

Before the US District Court, Western District of Pennsylvania, on behalf of Allegheny Energy, Inc.: Expert report on regulatory issues regarding the recovery of stranded costs, filed May 1989

Expert report, on behalf of ICG/Teleport addressing the way in which Denver's ordinance allocates costs among users of public rights-of-way. Filed April 21, 1999.

Before the Ohio Senate Ways and Means Committee, on behalf of the Ohio Electric Utility Institute: Direct testimony regarding restructuring of Ohio electricity industry. Filed April 20, 1999.

Before the Federal Energy Regulatory Commission, on behalf of the Central Vermont Public Service Corporation: Rebuttal testimony regarding CVPSC's reasonable expectation to serve its Connecticut Valley affiliate. Filed April 8, 1999.

Before the Joint Committee on Utilities and Energy, on behalf of the Central Maine Power Company: Direct testimony on rate design for recovery of stranded costs. Filed March 23, 1999.

Before the Illinois Commerce Commission, on behalf of the Commonwealth Edison Company: Direct testimony on Commonwealth Edison's delivery service tariffs. Filed March 1, 1999.

Before the Indiana Utility Regulatory Commission, on behalf of Ameritech Indiana: Direct testimony on interconnection issues between RBOC and independent LECs. Filed February 19, 1999.

Before the Indiana Utility Regulatory Commission, on behalf of Ameritech Indiana: Direct testimony on competitive flexibility and alternative rate plan issues. Filed January 29, 1999.

Before the Rhode Island Public Utilities Commission, on behalf of Bell Atlantic-Rhode Island: Rebuttal testimony regarding economic consequences of granting a request by CTC to assume BA-RI retail contract without customer penalty or termination charges. Filed December 4, 1998.

Before the Michigan Public Service Commission, on behalf of Ameritech Michigan: Surrebuttal testimony regarding interconnection agreement. Filed November 9, 1998.

Before the Michigan Public Service Commission, on behalf of Ameritech Michigan: Direct testimony regarding interconnection dispute with a CLEC. Filed October 20, 1998.

Before the Wisconsin Public Service Commission, on behalf of the Edison Electric Industry: Surrebuttal testimony on utility diversification issues. Filed October 16, 1998.

Before the Wisconsin Public Service Commission, on behalf of The Edison Electric Institute: Supplemental direct testimony addressing DSM issues and electric restructuring. Filed October 13, 1998.

Before the Virgin Islands Public Service Commission, on behalf of the Virgin Islands Telephone Company: Testimony regarding the Industrial Development Corporation tax benefit. Filed October 5, 1998.

Before the Wisconsin Public Service Commission, on behalf of The Edison Electric Institute: Rebuttal testimony addressing affiliate interest issues in a traditional regulatory environment. Filed October 2, 1998.

Before the Wisconsin Public Service Commission, on behalf of The Edison Electric Institute: Direct testimony addressing affiliate interest issues in a traditional regulatory environment. Filed September 9, 1998.

Before the Maine Public Utilities Commission, on behalf of Bell Atlantic-Maine: Declaration describing state regulation and special tariffs filed by Bell Atlantic. Filed August 31, 1998.

Before the Vermont Public Service Board, on behalf of Bell Atlantic-Vermont: Rebuttal testimony regarding economic consequences of granting CTC's request to allow assignment of BA-VT retail contracts without customer penalty or termination charges. Filed August 28, 1998.

Before the Massachusetts Department of Telecommunications and Energy, on behalf of Bell Atlantic-Massachusetts: Direct testimony commenting on economic consequences of CTC's policy of allowing customers to assign service agreements, without customer penalty, on resold basis to CTC. Filed August 17, 1998.

Before the Vermont Public Service Board, on behalf of Bell Atlantic-Vermont: Testimony regarding the economic consequences of granting a request by CTC to assume BA-VT retail contract without customer penalty or termination charges. Filed August 14, 1998.

Before the Illinois Commerce Commission, on behalf of Ameritech Illinois: Direct testimony on rate rebalancing plan. Filed August 11, 1998.

Before the Maine Federal District Court, on behalf of Bell Atlantic: Expert report responding to CTCs anti-competitive claims against Bell Atlantic-North. Filed July 20, 1998.

Before the New Hampshire Public Utilities Commission, on behalf of Bell Atlantic: Direct testimony on petition by CTC to assume contracts that CTC had won for Bell Atlantic when it was an agent. Filed July 10, 1998.

Before the Virgin Islands Public Service Commission, on behalf of VITELCO: Testimony on use of consultants by regulatory commissions; benefits of incentive regulation and treatment of tax benefits. Filed July 10, 1998.

Before the Public Utility Commission of California, on behalf of The Edison Electric Institute: Comments on the enforcement of affiliate transactions rules proposed by the California Public Utility Commission. Filed May 28, 1998.

Before the Public Service Commission of New Mexico, on behalf of Public Service Company of New Mexico: Rebuttal testimony regarding the Commission's investigation of the rates for electric service of PNM. Filed May 6, 1998.

Before the Oklahoma Corporation Commission, on behalf of Southwestern Bell Communications: Reply affidavit regarding SBC's application for provision of in-region interLATA service in Oklahoma. Filed April 21, 1998.

Before the Public Utility Commission of Texas, on behalf of Southwestern Bell Communications: Rebuttal testimony regarding SBC's application for provision of in-region interLATA service in Texas. Filed April 17, 1998.

Before the Public Service Commission of New Mexico, on behalf of the Public Service Company of New Mexico: Direct testimony to address the economic efficiency, equity, and public policy concerning PNM's company-wide stranded costs. Filed April 16, 1998.

Before the Illinois Commerce Commission (Docket nos. 98-00013 and 98-0035), on behalf of The Edison Electric Institute: Rebuttal testimony addressing the adoption of rules and standards governing relationships between energy utilities and their affiliates as retail competition in the generation and marketing of electricity is introduced, filed March 25, 1998. Surrebuttal filed March 11, 1998.

Before the Public Utility Commission of Texas, on behalf of Southwestern Bell Communications: Testimony regarding SBC's application for provision of in-region interLATA service in Texas. Filed February 24, 1998.

Before the Kansas Corporation Commission on behalf of Southwestern Bell Telephone Company: Direct testimony regarding SBC's application for provision of in-region interLATA service in Kansas. Filed February 15, 1998. Rebuttal filed May 27, 1998.

Before the Maine Public Utilities Commission, on behalf of Bell Atlantic - Maine: Testimony regarding the reasonableness of restructuring rates. Filed February 9, 1998.

Before the Arizona Corporation Commission, on behalf of Tucson Electric Power Company: Rebuttal testimony regarding the Commission's rules for introducing competition into the electric industry. Filed February 4, 1998.

Before the Oklahoma Corporation Commission, on behalf of Southwestern Bell Communications: Affidavit regarding SBC's application for provision of in-region interLATA service in Oklahoma. Filed January 15, 1998.

Before the Arizona Corporation Commission, on behalf of Tucson Electric Power Company: Testimony regarding the Commission's rules for introducing competition into the electric industry. Filed January 9, 1998.

Before the Maine Public Utilities Commission, on behalf of Central Maine Power Company: Testimony regarding the Commission's proposed affiliate rules. Filed January 2, 1998.

Before the Indiana Utility Regulatory Commission, on behalf of Ameritech Indiana: Testimony regarding Ameritech Indiana's proposal for an interim alternative regulation plan. Filed October 29, 1997.

Before the Public Utility Commission of Texas, on behalf of Entergy-Gulf States Utilities: Rebuttal testimony regarding Entergy's "Transition to Competition" proposal. Filed October 24, 1997.

Before the Illinois State Senate, "Report on SB 55," on behalf of Illinois Power Company: Report and Testimony on proposed electric industry restructuring legislation in Illinois. Filed October 9, 1997.

Before the Indiana Utility Regulatory Commission, on behalf of Ameritech Indiana: Testimony regarding Ameritech Indiana's proposal for a new alternative regulatory framework. Filed July 30, 1997.

Before the Public Utilities Commission of Ohio, on behalf of Ameritech Ohio: Testimony responding to AT&T's "Complaint against Ameritech Ohio, Relative to Alleged Unjust, Unreasonable, Discriminatory and Preferential Charges and Practices." Filed July 7, 1997.

Before the New Jersey Assembly Policy and Regulatory Oversight Committee, on behalf of Public Service Electric and Gas Company: Testimony regarding transition cost recovery from self generators. June 16, 1997.

Before the New Jersey Board of Public Utilities, on behalf of Public Service Electric and Gas Company: Testimony regarding transition cost recovery from self generators. Filed June 6, 1997.

Before the Federal Communications Commission: Reply Affidavit in support of SBC Communications Inc.'s application to offer interLATA service in Oklahoma. Filed May 27, 1997.

Before the Corporation Commission, on behalf of Kansas Pipeline Partnership: Testimony regarding Purchase Gas Adjustment proceeding for Western Resources, Inc. Filed May 7, 1997.

Before the Public Utility Commission of Texas, on behalf of Entergy-Gulf States Utilities: Supplemental direct testimony regarding Entergy's "Transition to Competition" Proposal. Filed April 4, 1997.

Before the Illinois Commerce Commission, on behalf of Ameritech Illinois: Testimony regarding price cap regulation. filed April 4, 1997

Affidavit: in support of SBC Communications Inc.'s application to offer interLATA service in Oklahoma. Before the Oklahoma Corporation Commission and the Federal Communications Commission. Filed February 20, 1997 (OCC) and April 7, 1997 (FCC).

Before the Federal Communications Commission, on behalf of Ameritech: Reply comments on access reform. Filed February 14, 1997.

Before the Federal Communications Commission, on behalf of Ameritech: Paper on access reform, "Access, Regulatory Policy, and Competition", filed January 29, 1997.

Before the Wisconsin Public Service Commission, on behalf of Ameritech - Wisconsin: Testimony regarding interconnection arbitrations. Filed December 5, 1996.

Before the Public Utility Commission of Texas, on behalf of Entergy-Gulf States Utilities: Testimony regarding Entergy's "Transition to Competition" proposal. Filed November 27, 1996.

Before the California Public Utilities Commission: Rebuttal testimony in support of the joint application of Pacific Telesis Group and SBC Communications Inc. for approval of their merger, (Application No. 96-04-038). November 8-9, 1996.

Affidavit: in support of Florida Public Service Commission's appeal of Federal Communications Commission's interconnection order (CC Docket No. 96-98). September 12, 1996.

Before the New Jersey Board of Public Utilities on behalf of Bell Atlantic - New Jersey: "Economic Competition in Local Exchange Markets," position paper on the economics of local exchange competition filed in connection with arbitration proceedings, August 9, 1996 (with William E. Taylor and Alfred E. Kahn).

Federal Communications Commission (CC Docket No. 96-45) on behalf of BellSouth Corporation, "Comments on Universal Service," (with William Taylor), analysis of proposed rules to implement the universal service requirements of the Telecommunications Act of 1996, filed April 12, 1996.

Before the Senate Committee on Commerce, Science and Transportation on FCC Structure and Function: Suggested Revisions, March 19, 1996.

Before the Federal Communications Commission in the Matter of Pricing for CMRS Interconnection on behalf of Ameritech, March 4, 1996.

Before the Senate Committee on Commerce, Science and Transportation on Telecommunications Reform on behalf of NARUC, March 2, 1995.

Before the House Committee on Energy and Commerce Committee, Subcommittee on Telecommunications and Finance on H.R. 4789, the Telephone Network Reliability Improvement Act of 1992, on behalf of NARUC, May 13, 1992.

Before the Senate Committee on Commerce, Science and Transportation on H.R. 2546, a bill proposing the Infrastructure Modernization Act of 1991, on behalf of NARUC., June 26, 1991.

SPEECHES (partial list)

Remarks before the 1996 Telecommunications Policy Research Conference, "Interconnection Principles and Efficient Competition", Solomon's Island, MD, October 7, 1996.

Remarks before the American Bar Association Section of Antitrust Law, "Charging Competitors and Customers for Stranded Costs: Competition Compatible?" Four Seasons Hotel, Chicago, IL, September 19, 1996.

Remarks before the 1996 EPRI Conference on Innovative Approaches to Electricity Pricing, "Prices and Profits: Perceptions of a Former Regulator," La Jolla, California, March 28, 1996.

Remarks before the Innovative Fuel Management Strategies for Electric Companies Conference sponsored by The Center for Business Intelligence, "Anticipating the Impact of Fuel Clause Reversal on Fuel Management," Vista Hotel, Washington, D.C., March 15, 1996.

Remarks before Electricity Futures Trading Conference, "Electricity Futures Trading: What the States Are Doing," Houston, Texas, March 14, 1996.

Panelist, "Regulatory Panel: Who Has Jurisdiction?" Public Power in a Restructured Industry, Washington, D.C., December 8, 1995.

Participant, "Public Policy for Mergers in a Time of Restructuring," Harvard Electric Policy Group, Crystal City, Virginia, December 7, 1995.

Panelist, Roundtable on "Competitive Markets in Electricity and the Problem of Stranded Assets," Progress and Freedom Foundation, Washington, D.C., December 1, 1995.

Panelist on "The Range of Uncertainty" at the Illinois Electricity Summit, Northwestern University, Evanston, IL., November 28, 1995.

PUBLICATIONS

"Demand Side Management in Today's Electricity Market," *Electricity Deregulation Commentary, Maine Policy Review*, Winter 2001, pp. 19-21.

"Reforming Universal Service One More Time," *Communications Deregulation and FCC Reform: What Comes Next?*, Jeffrey A. Eisenach and Randolph J. May, editors (Washington, D.C.: The Progress & Freedom Foundation, pp. 61-84. Conference Edition, December 2000.

"Back to the Basics: Federal Legislation, Electricity Deregulation," *The Boston Globe*, June 7, 2000.

"Consumer Sovereignty, Branding, and Standards of Competitive Practice," *Electricity Journal*, May 2000, Volume 13, Number 4, pp.76-84 (with Wayne Olson)

"Open Entry, Choice, and the Risks of Short-Circuiting the Competitive Process" prepared for the Edison Electric Institute, March 20, 2000. (with Wayne Olson)

"Getting it Right: Filling the Gaps in FERC's Stranded Cost Policies," *The Electricity Journal*, Volume 12, Number 4, May 1999.

"Choose the Right Recipe for Electric Deregulation," *The Star-Ledger*, December 16, 1998.

Prepared for Edison Electric Institute, "Fostering Efficient Competition in the Retail Electric Industry: How Can Regulators Help Solve Vertical Market Power Concerns? First, Do No Harm," July 22, 1998 (with Charles Augustine).

"The FCC's Common Carrier Bureau: An Agenda for Reform," Issue Analysis Number 62: Citizens for a Sound Economy Foundation, September 26, 1997 (with Paul Vasington).

"What Hath Hundt Wrought?," *Wall Street Journal*, page A18, May 30, 1997 (with Thomas J. Duesterberg).

Book: "Competition and Deregulation in Telecommunications: The Case for a New Paradigm," Hudson Institute, Indianapolis, IN, 1997 (with Thomas J. Duesterberg).

"The Regulators' and Consumer Advocate's Dilemma", *Purchased Power Conference*, Exnet, 1993.

"Public Utility Regulation: Reflections of a Sometime Deregulator", *Public Utilities Fortnightly*, Nov. 1, 1992.

"Utilities as Conservationists: One Regulator's Viewpoint", in *The Economics of Energy Conservation*, proceedings of a POWER Conference, Berkeley, CA, 1992.

"Incentive Regulation in Telecommunications: Lessons for Electric and Gas", in *Incentive Regulation*, Proceedings and Papers, 1992 (Exnet).

Public Utilities Fortnightly, State Regulators' Forum, Contributor since 1992.

"Competition, Deregulation and Technology: Challenges to Traditional Regulatory Process", *In Your Interest*, Minnesota Utility Investor, Inc., 1992.

"Policing the Environment", *Institutional Investor*, October, 1992.

"Regulation: Obstructor or Enabler?", in *Proceedings: Cooperation and Competition in Telecommunications*, Conference sponsored by the Commission of the European Directorate General XIII, Rome, 1993.

"A Basis for Allocating Regulatory Responsibilities", in Clinton J. Andrews, (ed.), *Regulating Regional Power Systems*, Quorum Books, Westport, CT, 1995 (with Christopher Mackie-Lewis).

Book review: Stephen Breyer, *Breaking the Vicious Circle: Toward Effective Risk Reduction*, Harvard University, Press, 1992, in Federal Reserve Bank of Boston, *Regional Review*, 1994.

"Weighing Environmental Coasts in Utility Regulation: The Task Ahead", *The Electricity Journal*, October, 1990.

"The Effects of Higher Telephone Prices on Universal Service" Federal Communications Commission, Office of Plans and policy, Working Paper No. 10, March, 1984 (with John Haring).

"Are Recent FCC Telephone Rate Reforms a Threat to Universal Service" in Harry S. Trebing (ed.), *Changing Patterns in Regulation, Markets and Technology: The Effect on Public Utility Pricing*, University of Michigan Press, 1984 (with John Haring).

"A Framework for a Decentralized Radio Service, "a staff report of the Office of Plans and Policy, Federal Communications Commission, September, 1983 (with Alex Felker).

"L'impact de la television par cable sur les autres medias" (The Impact of Cable Television on other media in the United State"), *Trimedia*, numero 18019, printemps, 1983 (in French, also reprinted in Spanish).

"FCC Policy on Cable Ownership" in Gandy, Espinosa & Ordovery, (eds.) *Proceedings from the Tenth Annual Telecommunications Policy Research Conferences*, ABLEX, Norward, N.Y., 1983.

"FCC Policy on Cable Crossownership", a staff report of the Office of Plans and Policy, Federal Communications Commission, November, 1981. (With Jonathan levy and Robert S. Preece; I was director of the study.)

"Economics and Telecommunications Privacy: A Framework for Analysis," Federal Communications Commission, Office of Plans and Policy, Working Paper No. 5, December, 1980. (With James A. Brown).

"The Effects of Minimum Wage on Private Household Workers" in Simon Rottenberg, (ed.), *The Economics of Legal Minimum Wages*, American Enterprise Institute, Washington, 1981.

“Deregulation, Rights and the Compensation of Losers,” in William G. Shepherd and Kenneth Boyer, eds., *Economic Regulation: A Volume in Honor of James R. Nelson*, University of Michigan Press, 1981. Also circulated as American Enterprise Institute Working Paper in Regulation, 1980.

“Social Security and Welfare: Dynamic Stagnation”, *Public Administration Review*, March 1967.

INCIDENTAL TEACHING AND LECTURING

University and College

Yale School of Management and Organization
Harvard Law School, Telecommunications Seminar
Suffolk University Law School
University of Maine
Boston University

Other

Edison Electric Institute
(Electricity Consumers Resource Council)

July 11, 2001

Harold West III
Local Competition in VA

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

RECEIVED

JUL 31 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)	
Petition of WorldCom, Inc. Pursuant)	
to Section 252(e)(5) of the)	CC Docket No. 00-218
Communications Act for Expedited)	
Preemption of the Jurisdiction of the)	
Virginia State Corporation Commission)	
Regarding Interconnection Disputes)	
with Verizon Virginia Inc., and for)	
Expedited Arbitration)	
)	
In the Matter of)	CC Docket No. 00-249
Petition of Cox Virginia Telecom, Inc., etc.)	
)	
In the Matter of)	CC Docket No. 00-251
Petition of AT&T Communications of)	
Virginia Inc., etc.)	
)	

VERIZON VIRGINIA INC.

Testimony of Harold E. West III

July 31, 2001

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1 **I. INTRODUCTION**

2 **Q. Please state your name, position and business address.**

3 A. My name is Harold E. West, III. I am Director – Regulatory Support for Verizon
4 Communications, Inc. My office is located at 540 Broad Street, Newark, New Jersey.

6 **Q. Please describe your professional and educational background and experience.**

7 A. I graduated from Princeton University in 1980 with a Bachelor of Sciences degree in
8 engineering. In 1991, I completed an Executive Masters program at the University of
9 Pennsylvania and received a Master of Sciences degree in engineering.

10 I began working for New Jersey Bell (now Verizon-New Jersey Inc.) in 1980 as a
11 central office equipment engineer. I then held positions of increasing responsibility in
12 Service Costs, Rates, Product Management and Sales. I assumed my current position in
13 December 1994. I have provided testimony before public utility commissions in
14 Delaware, Maryland, Massachusetts, New Jersey, New York, Pennsylvania, Virginia and
15 Washington, D.C. on various marketing, policy, and pricing issues associated with
16 competitive entry into telecommunications markets. I have also participated in CLEC
17 arbitration proceedings in Delaware, New Jersey and Pennsylvania.

19 **Q. What is the purpose of your testimony?**

20 A. I will testify about the general state of competition in the local exchange market in the
21 parts of Virginia served by Verizon Virginia Inc. (“Verizon VA”)¹, including all three

¹ Verizon VA serves those areas in Virginia that formerly were served by Bell Atlantic. Other parts of Virginia that are served by Verizon South, and formerly were served by

1 modes of interconnection under the Telecommunications Act and both business and
2 residential markets. Specifically, I will demonstrate that CLECs are today providing
3 local service to hundreds of thousands of Virginia customers using competitive facilities,
4 UNEs (including the UNE-Platform), and resale. I will demonstrate, moreover, that the
5 areas served by Verizon VA include concentrated metropolitan areas that are attractive
6 targets for competitors, who have generally focused first on lucrative business customers
7 and then expanded into the mass market.

8 I also will testify more specifically about the widespread deployment of
9 competitive switches, both on a nationwide basis and in Virginia.

10 Finally, I will demonstrate that competitors are poised to take over an even larger
11 share of the market in the future. As Dr. James Vander Weide and Mr. Allen Sovereign
12 explain in their testimony, the forward-looking economic cost principle requires a
13 consideration of the level of competition and investment risk over the entire future life of
14 Verizon VA's investment in network facilities. To that end, I will demonstrate that
15 Verizon VA faces competition in the future not only from facilities-based CLECs but
16 also from alternative facilities such as packet switching and Internet telephony, cable, and
17 wireless services.

18

GTE, are not at issue in these proceedings. My testimony therefore does not cover those areas.
All references to "Virginia" mean only the parts of Virginia served by Verizon VA.

1 **II. LOCAL COMPETITION IN VIRGINIA**

2 **Q. Please summarize the state of competition in Virginia.**

3 A. As Attachment A demonstrates, competition is thriving in Virginia. Verizon VA's
4 territory includes the most concentrated metropolitan areas in Virginia, including all of
5 the ten most populous cities. Such concentrated metropolitan areas are especially
6 attractive targets for competitors. As the Commission has recognized, CLECs have
7 generally entered the business market in more densely populated areas before expanding
8 into the mass market and less populated areas.²

9 Competitors are using all three modes of interconnection to provide service to
10 both residential and business customers throughout the Commonwealth: their own
11 facilities, Verizon VA's UNEs (including the UNE-Platform), and resale of Verizon
12 VA's services. Facilities-based competition in particular is flourishing.

13 The numbers themselves remove any doubt about the size and breadth of local
14 competition in Virginia. More than 75 CLECs are actively providing local service in
15 Virginia. As of the end of May 2001, CLECs had more than 1000 collocation
16 arrangements in place. Indeed, the number of completed collocation arrangements has
17 grown more than 100% since the beginning of 2000. CLECs currently are collocated in

² See, e.g., Ind. Anal. Div., FCC, *Local Competition: August 1999* at 4-5 (Aug. 1999) ("[T]he data set we have examined allows us to evaluate the validity of certain assertions of industry analysts. One such assertion, made by virtually all analysts, is that competition is emerging most rapidly in urban business districts. . . . [H]igh-volume, low-cost customers in urban business districts are more attractive to new entrants than either rural or residential customers."); *id.* at 5 ("The facilities-based entry patterns in the three years following the 1996 Act's passage provide empirical support for these observations. We have found statistical support for the fact that firms are entering the largest and densest markets first"); Ninth Report and Order and Eighteenth Order on Reconsideration, *Federal-State Joint Board on Universal Service*, 14 FCC Rcd 20432, 20441-42 ¶ 16 (1999) ("[C]ompetitors may be likely to target high-revenue business customers in low-cost urban areas. . . .").

1 102 of the 215 wire centers in Verizon VA, covering approximately 88% of the access
2 lines served by Verizon in Virginia.

3 By the end of May 2001, CLECs had more than 121,000 facilities-based and
4 UNE-Platform residential directory listings and approximately 29,000 facilities-based
5 business directory listings. Competitors now have 9% of the local exchange market in
6 Virginia, above the national average of 8.5%.³

7 Competition in the local market not only is substantial, but also is expanding
8 rapidly. Since the beginning of 1999, for example, the number of interconnection trunks
9 purchased by CLECs increased by more than 600%. The number of UNE-Platforms
10 purchased by CLECs has increased by nearly 50% each month on average over the last
11 six months for which data is available. Customers, moreover, are switching to other
12 types of technologies in large numbers. I describe these alternatives in more detail
13 below.

14
15 **Q. Please explain in more detail the status of facilities-based local competition in**
16 **Virginia.**

17 **A.** Facilities-based competition is particularly strong, and growing rapidly. Industry reports
18 indicate that competitors in Virginia have deployed, or are in the process of deploying,
19 more than 40 local voice switches and at least 2000 route miles of fiber in Verizon's
20 service territory. For example, Adelphia operates three fiber networks with three local
21 voice switches in Virginia. WorldCom, with networks in Reston and in Richmond, has
22 deployed at least 71 route miles of fiber and one local voice switch. In addition to those

³ Robert Burke, *Phone*, Va. Bus., July 2001, at 22, 25.

1 carriers, Cavalier Telephone and two other CLECs each have three local voice switches
2 in Virginia, Cox and four other CLECs each have two, and six CLECs have one each.
3 CLECs also have deployed at least 25 data switches, and are using many of those
4 switches to provide voice services, as discussed further below. These figures do not even
5 include voice or data switches located in Washington, D.C. and Maryland that may also
6 be used to provide service in Virginia. For example, more than half of the local voice
7 switches located in Washington, D.C., and local voice switches located in Rockville and
8 Laurel, Maryland currently serve rate centers in Northern Virginia.

9 As of the end of May 2001, competitors had obtained more than 1000 collocation
10 arrangements in Virginia, covering 102 of the 215 wire centers in Verizon VA; the
11 number of completed collocation arrangements has more than doubled since the
12 beginning of 2000. Through those arrangements, CLECs have access to 88% of the
13 switched access lines served by Verizon in Virginia, including approximately 92% of
14 Verizon's total business lines and 86% of its total residential lines.

15 In addition, as of the end of May, CLECs had obtained approximately 150,000
16 facilities-based directory listings, including more than 121,000 for residential customers
17 and more than 29,000 for business customers, including both residential and business
18 listings in every area code in Virginia.

19
20 **Q. Please describe a few examples of facilities-based CLECs competing with Verizon in**
21 **Virginia.**

1 A. AT&T, Cavalier, and Adelphia exemplify the variety and scope of local facilities-based
2 competition in Virginia, including competition from high-speed data services and cable
3 networks.

4 As explained in Attachment A, AT&T, one of the largest facilities-based CLECs
5 in the U.S., serves [AT&T PROPRIETARY BEGINS] XXX [AT&T
6 PROPRIETARY ENDS] lines in Virginia over facilities it has deployed itself. As of
7 the end of June 2001, facilities-based directory listings showed that AT&T served
8 [AT&T PROPRIETARY BEGINS] XXX [AT&T PROPRIETARY ENDS]
9 residential lines over its own cable network. Its network includes two local voice
10 switches in the Richmond metropolitan area, and others in Norfolk, Roanoke,
11 Fredericksburg, and Arlington. AT&T has ported [AT&T PROPRIETARY BEGINS]
12 XXX [AT&T PROPRIETARY ENDS] numbers, and is using [AT&T
13 PROPRIETARY BEGINS] XXX [AT&T PROPRIETARY ENDS] unbundled stand-
14 alone loops. AT&T has obtained [AT&T PROPRIETARY BEGINS] XXX [AT&T
15 PROPRIETARY ENDS] NXX codes in Virginia.

16 Cavalier Telephone, for its part, states its “one purpose” is to provide competition
17 for Verizon. To that end, Cavalier has established a network in Richmond, Hampton
18 Roads, and northern Virginia that, by its own account, includes 150 miles of fiber optic
19 backbone, three switches, and more than 60 collocation sites. The company targets both
20 business and residential phone customers for its voice, Internet, and data service
21 offerings. June 2001 directory listings showed that Cavalier was providing service to
22 [CAVALIER PROPRIETARY BEGINS] XXX [CAVALIER PROPRIETARY
23 ENDS] lines over facilities it had deployed itself, including [CAVALIER

1 **PROPRIETARY BEGINS]** XXX **[CAVALIER PROPRIETARY ENDS]** lines to
2 residential customers. As of the end of June 2001, Cavalier had ported **[CAVALIER**
3 **PROPRIETARY BEGINS]** XXX **[CAVALIER PROPRIETARY ENDS]** numbers,
4 and was using **[CAVALIER PROPRIETARY BEGINS]** XXX **[CAVALIER**
5 **PROPRIETARY ENDS]** unbundled loops. By the end of May, Cavalier had obtained
6 **[CAVALIER PROPRIETARY BEGINS]** XXX **[CAVALIER PROPRIETARY**
7 **ENDS]** NXX codes in Virginia.

8 Adelphia Business Solutions (formerly Hyperion Telecommunications) was
9 formed in 1991 by Adelphia Communications, one of the nation's largest cable television
10 providers, to provide integrated communications services, including local service, to
11 business customers. Adelphia operates three fiber networks with three local voice
12 switches in Virginia, and is building a 700-mile network out of Norfolk. Adelphia uses
13 facilities it has deployed itself to serve **[ADELPHIA PROPRIETARY BEGINS]** XXX
14 **[ADELPHIA PROPRIETARY ENDS]** lines in Virginia, virtually all of which are to
15 business customers. As of the end of June 2001, it also served **[ADELPHIA**
16 **PROPRIETARY BEGINS]** XXX **[ADELPHIA PROPRIETARY ENDS]** lines to
17 business customers on a resale basis as of the end of May 2001. Adelphia has ported
18 **[ADELPHIA PROPRIETARY BEGINS]** XXX **[ADELPHIA PROPRIETARY**
19 **ENDS]** numbers. As of the end of May 2001, Adelphia had obtained **[ADELPHIA**
20 **PROPRIETARY BEGINS]** XXX **[ADELPHIA PROPRIETARY ENDS]** NXX codes
21 in Virginia.

22
23 **Q. Is CLEC demand for UNEs, including the UNE-Platform, increasing?**

1 A. Yes. CLEC competition using UNEs is broad and continuing to expand. As of the end
2 of May 2001, Verizon had provided a total of approximately 124,000 unbundled loops to
3 more than 25 different competitors. This figure includes more than 116,000 loops
4 provided on a stand-alone basis, plus more than 7,600 loops provided as part of UNE-
5 Platforms. Competitors have obtained loops throughout Virginia to serve both residential
6 and business customers.

7 Verizon is providing unbundled local switching to approximately five different
8 CLECs. As of the end of April 2001, Verizon was providing competitors with more than
9 7,600 unbundled switching line ports as part of platforms. Verizon has provided more
10 than 630 unbundled dedicated local transport facilities to CLECs in Virginia.

11 In addition, the number of UNE-Platforms purchased by CLECs has grown by
12 nearly half each month on average over the last six months for which data are available.
13

14 **Q. Are there large numbers of resellers that resell Verizon VA services?**

15 A. Yes. As of the end of May 2001, approximately 50 CLECs in Virginia were reselling
16 approximately 107,000 lines, including more than 70,000 business lines and more than
17 36,000 residential lines. All but one of Verizon's wire centers in Virginia had at least one
18 resold line, and 90% had at least ten.
19

1 **III. COMPETITION FROM DATA PROVIDERS**

2 **Q. Does Verizon VA face competition from data providers?**

3 A. Yes. A number of data providers offer data services in Virginia. As packet-switched
4 technology and Internet Protocol telephony become more prevalent, those providers will
5 be able to provide voice communications over their data networks.

6
7 **Q. Please discuss competition from data CLECs and DSL providers.**

8 A. Several CLECs have deployed DSL services in Virginia. For example, Covad has been
9 offering DSL service in Virginia since the end of 1998, and now provides service to both
10 business and residential customers in Arlington, Alexandria, and Fairfax, as well as
11 Richmond and Norfolk. Covad has completed [COVAD PROPRIETARY BEGINS]
12 XXX [COVAD PROPRIETARY ENDS] physical collocation arrangements and
13 [COVAD PROPRIETARY BEGINS] XXX [COVAD PROPRIETARY ENDS]
14 virtual collocation arrangement(s) in Virginia central offices, with another [COVAD
15 PROPRIETARY BEGINS] XXX [COVAD PROPRIETARY ENDS] physical
16 arrangement(s) in progress. In addition, Rhythms NetConnections provides DSL service
17 in Richmond, Norfolk, and Virginia Beach. Rhythms has completed [RHYTHMS
18 PROPRIETARY BEGINS] XXX [RHYTHMS PROPRIETARY ENDS] physical
19 collocation arrangements and [RHYTHMS PROPRIETARY BEGINS] XXX
20 [RHYTHMS PROPRIETARY ENDS] virtual collocation arrangement(s) in Virginia
21 central offices and has [RHYTHMS PROPRIETARY BEGINS] XXX [RHYTHMS
22 PROPRIETARY ENDS] physical collocation arrangement(s) in progress. Network
23 Access Solutions (NAS) began offering DSL service in Reston in February 1997. NAS
24 also offers service in Norfolk and Richmond. NAS has completed [NAS

1 **PROPRIETARY BEGINS]** XXX **[NAS PROPRIETARY ENDS]** physical collocation
2 arrangements and **[NAS PROPRIETARY BEGINS]** XXX **[NAS PROPRIETARY**
3 **ENDS]** virtual collocation arrangement(s) in Virginia central offices, with another **[NAS**
4 **PROPRIETARY BEGINS]** XXX **[NAS PROPRIETARY ENDS]** physical
5 arrangement(s) and **[NAS PROPRIETARY BEGINS]** XXX **[NAS PROPRIETARY**
6 **ENDS]** virtual arrangement(s) in progress.

7 Other CLECs are also offering advanced telecommunications services in Virginia,
8 both on a stand-alone basis and bundled with other telephone services. Cavalier and
9 NTELOS also have invested in and are providing DSL services to Virginia customers.

10 As of the end of May 2001, Verizon had provisioned approximately 22,000
11 unbundled loops for data communications services (primarily xDSL loops), including
12 **[COVAD PROPRIETARY BEGINS]** XXX **[COVAD PROPRIETARY ENDS]**
13 unbundled loops provisioned for Covad and **[NAS PROPRIETARY BEGINS]** XXX
14 **[NAS PROPRIETARY ENDS]** for NAS.

15
16 **Q. Please explain how data providers will be able to offer competitive voice services.**

17 **A.** Recent technological developments allow data providers to route voice communications
18 over DSL or other data networks. So-called “softswitches” operate over broadband
19 connections and can be used to route voice and data using Internet Protocol (IP). More
20 advanced softswitches, known as “virtual central offices,” even provide additional
21 services such as call forwarding and voice messaging. In addition, softswitches remove
22 the geographic constraints on conventional voice switching, because calls can be routed

1 to the Internet without passing through the switched telephone network to a central
2 office.⁴

3 Indeed, analysts have attributed a decline in the market for traditional circuit
4 switching equipment to the convergence of voice-onto-data networks.⁵ “The economics
5 of an IP packet-based platform are compelling. While a circuit switch network’s price
6 performance doubles every 80 months, that of an IP network doubles in about a quarter of
7 that time, or every 20 months. Providing voice and data services over a single network is
8 an economically attractive proposition. Carrying voice traffic on a packet platform saves
9 up to 70% in operating costs, by [Banc of America] estimates.”⁶

⁴ Vicky Uhland, *Switchin’ to Go*, Interactive Week, Jan. 15, 2001 (“A company can own one softswitch and 10 to 15 voice gateways and be able to access the entire country. Gone is the need for a central office.”) <www.zdnet.com/intweek/stories/news/0,4164,2674861,00.html>.

⁵ See C. Armacost, SG Cowen Securities Corp., Investext Rpt. No. 24601222 – Lucent Technologies – Company Report at *1 (Feb. 1, 2001).

⁶ Wall St. Transcript Corp., Investext Rpt. No. 2003080, Analyst Interview: Telecommunications – Industry Report at *3-*4 (Sept. 22, 2000) (quoting Trent Spiridellis, Principal and Senior Equity Research Analyst, Banc of America Securities). See also A. Lindstrom, *Talkin’ ‘Bout Next-Generation Telcos*, Bus. Comm. Rev., May 1, 2001, at 14 (quoting P. William Bane, vice president of Mercer Management Consulting: “New business models based on the use of IP-oriented switches have an infinitely better value proposition for carriers. . . . They’ll enable gross margins in the 60 percent-plus range and the ability to provide differentiated offerings.”).

See also E.R. Jackson, U.S. Bancorp Piper Jaffray Inc., Investext Rpt. No. 2267558, Sonus Networks Inc.: Initiating Coverage – Company Report (Aug. 21, 2000):

Packet switching takes advantage of very favorable technology trends. Currently, packet telephony offers potential reductions of up to 50% in switch per-port costs. This difference is very likely to increase due to the performance capabilities of data components doubling every 18 months due to the effects of Moore’s law while the performance capability of voice components is only doubling every 10 years. . . . Faster, cheaper, smaller, and more versatile switching equipment is transforming the central office. The use of packet

1 By their own statements, Verizon VA's competitors have made clear that they
2 intend to use data switches to provide voice telephony. Indeed, in 1999, both AT&T and
3 Sprint announced they would no longer buy circuit switches for their long-distance
4 networks, turning instead to ATM switches and IP technology.⁷ An AT&T official
5 recently testified before Congress that "with the growth of services like IP telephony,
6 there is no longer a clear distinction between 'voice' and 'data' transmissions."⁸
7 Similarly, a WorldCom official stated that "[a]s part of converging voice and data
8 services," WorldCom planned to roll out a "soft switch or IP switch to handle Internet
9 and voice services on IP backbone."⁹ According to Net2000, "All of Net2000's services
10 will be based on an ATM . . . backbone, which is capable of carrying multiple services,
11 including frame relay, IP and high-quality voice."¹⁰ Intermedia stated that it "has 200

telephony infrastructures can result in a reduction of up to 90% in equipment space requirements. This important point is amplified as Central Office space is a very finite resource and is some of the most costly real estate worldwide.

⁷ See T.K. Horan, CIBC Oppenheimer, Investext Rpt. No. 2749262, Telecom Services: Daily Teletimes – Industry Report at *1 (Mar. 1, 1999) ("These announcements are consistent with our thesis that telephone networks are gradually migrating from circuit-switched to packet-switched. ATM switches are essentially a hybrid switch with many of the same features and functionality of both a circuit and packet switch.")

⁸ Prepared Testimony of James W. Cicconi, General Counsel and Executive Vice President, AT&T Corp., Before the House Committee on Commerce, Federal News Service (Apr. 25, 2001).

⁹ Fred Briggs, MCI Chief Technology Officer, quoted in *Telephony*, Comm. Daily (Apr. 14, 2000).

¹⁰ *Net2000 Communications Announces Installation of Six Nortel Networks Passport 7480 Multi-service Switches on Network*, PR Newswire (Dec. 7, 1999). See also *Net2000 Announces Record Financial Results for Fourth Quarter and Year-End 2000*, Bus. Wire (Feb. 7, 2001) (quoting Mark Mendes, Chief Operating Officer: As of the end of 4Q 2000, Net2000 had completed the first two phases of its network build plan, "putting in place a national

1 data switches deployed across the U.S. There's no way to put 200 DMS 500s in our
2 network, but with [voice-over-IP], we can provide voice to all of our customers in every
3 market."¹¹

4 As noted above, CLECs have already deployed more than 25 data switches in
5 Virginia and already are using many of those switches to provide voice services. As the
6 technology is further refined and becomes even more affordable, data switches and voice-
7 over-IP will pose a formidable competitive challenge to Verizon VA's circuit-switched
8 networks.

data network over which we can carry both voice and data traffic for our existing East Coast customers.").

¹¹ Lindstrom, *supra* note 5, at 14 (quoting Intermedia spokesperson).

1 **IV. COMPETITION FROM OTHER SOURCES**

2 **Q. What other alternative technologies compete with Verizon VA?**

3 A. Verizon VA also faces competition for local voice and data service from a number of
4 cable providers, who provide service by bypassing Verizon VA's network. In addition,
5 although the Commission has found that wireless services are not yet a substitute for
6 wireline, it nonetheless has recognized that wireless providers are increasingly
7 competitive in the local market.

8
9 **Q. Please discuss competition from cable providers.**

10 A. Several providers have made significant inroads into the Virginia telecommunications
11 market, particularly with high-speed Internet offerings.

12 For example, Cox Communications provides cable service to over 700,000
13 customers in Virginia. Cox began aggressively advertising Cox@Home, a high-speed
14 Internet service, to its 58,000 cable customers in Roanoke, Roanoke County, and Vinton,
15 last year. Cox spent \$13 million to upgrade its network there, and laid 550 miles of fiber-
16 optic and coaxial cable to offer new broadband service, including cable modem and
17 digital TV. Cox has been offering cable modem service in Newport News since 1997, in
18 Hampton Roads since 1999, and in northern Virginia since 2000. Cox also offers its
19 Digital Telephone service in Hampton Roads and parts of Newport News, Williamsburg,
20 and Virginia Beach.

21 Cox also provides voice service to business and residential customers over its
22 cable network using circuit-switched technology. Cox serves [COX PROPRIETARY
23 BEGINS] XXX [COX PROPRIETARY ENDS] lines in Virginia over facilities it has
24 deployed itself; facilities-based directory listings indicate that currently Cox serves [COX

1 **PROPRIETARY BEGINS] XXX [COX PROPRIETARY ENDS]** lines to residential
2 customers. Cox Digital Telephone service currently offers residential voice service to
3 Cox cable customers in Hampton Roads and parts of Newport News, Williamsburg, and
4 Virginia Beach. As of the end of June 2001, Cox also provided service to **[COX**
5 **PROPRIETARY BEGINS] XXX [COX PROPRIETARY ENDS]** business customers
6 on a resale basis. Cox has ported **[COX PROPRIETARY BEGINS] XXX [COX**
7 **PROPRIETARY ENDS]** numbers, and is using **[COX PROPRIETARY BEGINS]**
8 **XXX [COX PROPRIETARY ENDS]** unbundled stand-alone loops.

9 In addition, AT&T Broadband, “the nation’s largest broadband service provider”
10 and one of the largest cable operators in Virginia, has been providing cable modem
11 service in Richmond since June 1999 and now also offers its Road Runner cable modem
12 service in other areas in Virginia. AT&T also is competing for local phone customers in
13 the Richmond area through its cable company, MediaOne, and has made significant
14 upgrades to its network in central Virginia in preparation for its digital cable, telephone,
15 and high-speed Internet access service offering.

16 Adelphia is another notable example, providing cable modem services extensively
17 throughout Virginia, including its Powerlink service in Waynesboro, Winchester,
18 Staunton, Fredericksburg, Charlottesville, and Blacksburg. Comcast Cablevision offers
19 its @Home service in several areas, including Alexandria, Woodbridge and Chesterfield
20 County, as well as Expressnet service in Arlington. Other competitors are discussed in
21 Attachment A to this testimony.

22 Like the data providers discussed above, cable providers will be able to use data
23 switches to provide voice telephony.

1
2 **Q. Please discuss competition from wireless providers.**

3 A. Verizon also faces stiff competition from wireless carriers. For example, four mobile
4 wireless companies that provide full coverage of the U.S. — AT&T, Sprint PCS,
5 VoiceStream, and Cingular Wireless — operate wireless networks in Virginia. Verizon
6 has entered into more than 20 approved agreements with mobile wireless providers in
7 Virginia. WorldCom is also investing in its own fixed wireless technology to bypass the
8 LEC network and currently holds wireless licenses that cover 91 of Verizon VA's wire
9 centers.

10 Wireless service is already a viable alternative to traditional telephone service for
11 many residential and business customers in Virginia and is expected to grow in
12 popularity. In fact, the number of wireless telephone subscribers in Virginia increased by
13 32% in 2000, ahead of the national average of 27%.¹² The FCC has cited statistics on
14 increasing minutes of use as a reflection of "decreasing prices and the general wider
15 acceptance of and reliance upon wireless service,"¹³ and has noted that this trend "may
16 also indicate that mobile telephony is moving away from just complementing existing
17 wireline voice service and towards competing directly with it."¹⁴

¹² Sixth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, FCC 01-192, App. C at Table 2 (rel. July 17, 2001) ("*Sixth CMRS Report*"); *id.* at e. Wireless/Wireline Competition ("For some, wireless service is no longer a complement to wireline service but has become the preferred method of communication.").

¹³ Fifth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, 15 FCC Rcd 17660, 17682 (2000) (citing Paul Kagan Associates).

¹⁴ *Id.* See also *Sixth CMRS Report* at e. Wireless/Wireline Competition ("For some, wireless service is no longer a complement to wireline service but has become the preferred method of communication.")

Declaration of Harold E. West III

I declare under penalty of perjury that the foregoing is true and correct. Executed this

30TH day of July, 2001.

A handwritten signature in black ink, appearing to read "Harold E. West III", is written over a horizontal line.

Harold E. West III